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ABSTRACT

The logical structure of the data bank is described from the user's point of view, without reference to machine implementation. The length of files, records, segments, and fields are variable and unlimited; duplication factors are unlimited; sequence of files, records within file, and segments within record are random. All data are subject to unrestricted revision and expansion. Access is by directory, in the form of multiple inverted indices. While the data files are identical in structure, they differ in content. Five "types" of record are identified: (1) unique object description, (2) biography, (3) publications, (4) events and (5) places. A separate file, associated with its own set of inverted indices, is planned for each type. The description of the data bank structure and contents is followed by three appendices: Appendix 1: acronyms in use, June 1970. Appendix 2: definitions of annotation classes in use, June 1970. Appendix 3: model for a combined thesaurus and inverted index. (Author/NH)

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STRUCTURE AND CONTENT OF A MUSEUM DATA BANK

By David Vance

and Jack Heller

Compiled for use in connection with

A Workshop

on

Data Collection and Data Dissemination in Museums

at The Metropolitan Museum of Art

June 5, 1970

(Revised July 1970 and January 1971.)

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STRUCTURE AND CONTENT OF A MUSEUM DATA BANK

Developed jointly by the
Museum Computer Network
and Professor Jack Heller
(Not entirely implemented as of June, 1970.)

STRUCTURE

The logical structure of the data bank is described from the user's point of view, without reference to machine implementation. The user may assume throughout that length of files, records, segments, and fields are variable and unlimited; duplication factors are unlimited; sequence of files, records within file, and segments within record are random. All data are subject to unrestricted revision and expansion. Access is by directory, in the form of multiple inverted indices.

The data files are identical in structure, but differ in content. Five "types" of record have been distinguished to date, and a separate file, associated with its own set of inverted indices, is planned for each type.

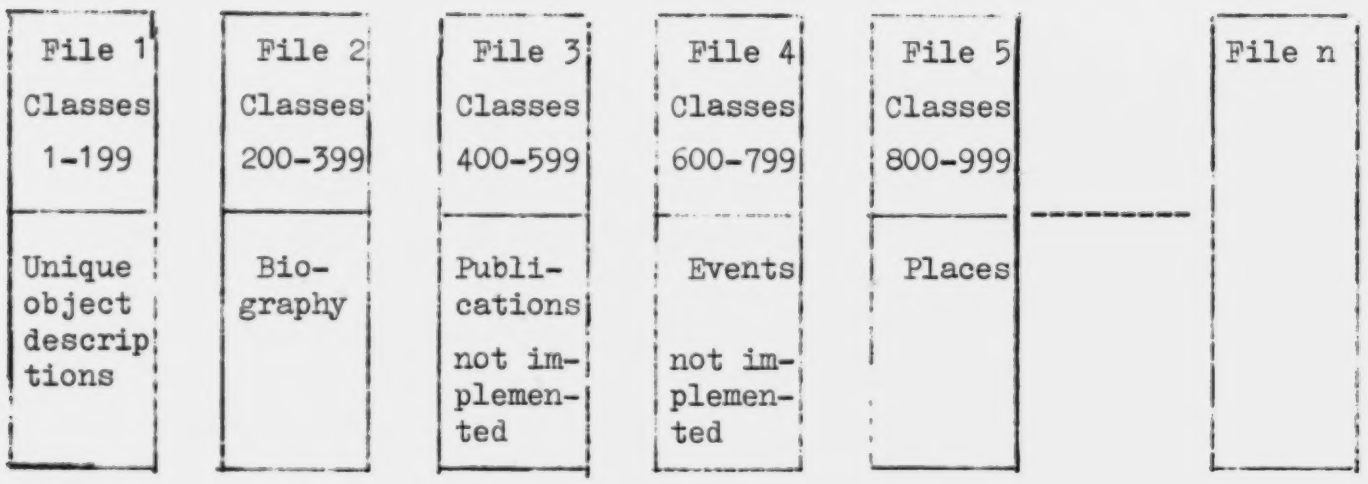

DIAGRAM 1: ITEM FILES

The data files are known collectively as the "Item File;" and each one is composed of an open-ended sequence of variable length records called "items," every item being the description of one entity.

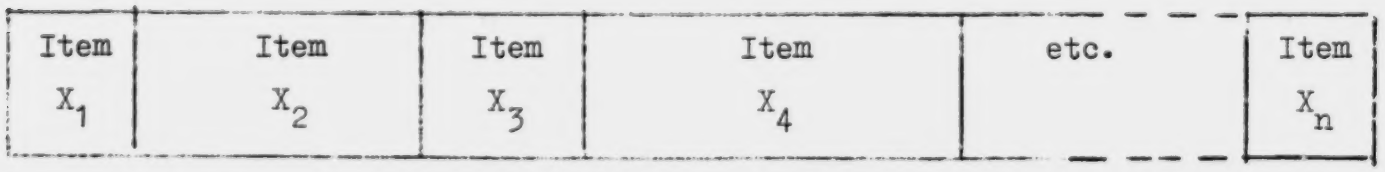

DIAGRAM 2: STRUCTURE OF AN ITEM FILE

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The individual item is subdivided into a series of segments known as "units." There may be any number of these, and they may be listed in any order. There are three separate kinds of unit:

1. Identifier(s).
   There must be at least one identifier in every item, and no identifier may be duplicated within the data bank or within the entire set of Museum Computer Network data banks. The identifiers will be indexed and will serve as ultimate tie-breakers in all sorting operations. They are the "targets" of links between items.

2. Indexed descriptors.
   An indexed descriptor consists of a word, phrase, or number conveying one fact about the described entity. Arbitrarily all indexed descriptors have been assigned even annotation class numbers, signifying* intent to construct an inverted index for the class. The identifier may be considered a special indexed descriptor.

3. Free text.
   A free text unit consists of information in any form, conveying a set of related facts about the described entity. All free text units have been assigned odd annotation numbers, showing that there is no intent to construct an inverted index for the class.

Several of the free text annotation classes are paired with a corresponding indexed descriptor class, which serves as an index to the free text, where both occur in a single item.

Any indexed annotation class except that of the identifier may be repeated as often as needed in a single item, and the occurrences need not be consecutive. Free text annotation classes may also be repeated within the item for reasons of convenience. However, there is no logical reason for maintaining such separation, so all free text strings with the same number will normally be concatenated when an item is retrieved.

The distinction between a unitary fact and a cluster of facts is, of course, arbitrary, since any factual statement can be replaced by a set of more specific statements ad infinitum. By the word "fact," I mean here whatever can be communicated by one indexible descriptor combined with an annotator; and by "indexible" I mean a character string that (in its sort string form) is likely to be used as a criterion for selective retrieval and/or sorting. This likelihood remains a matter of subjective judgment. A mistaken judgment would not be serious, however, since inverted indices can be constructed for odd numbered classes.

*No indices have yet been constructed as of January 1971.

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*6	Identifier
n_1	Indexed descriptor
m_1	Free text
n_2	Indexed descriptor
n_3	Indexed descriptor
m_2	Free text
etc.	
0	Null segment

n = even annotation number

m = odd annotation number

* Need not be first segment in record.

DIAGRAM 3: STRUCTURE OF AN ITEM

Units within an Item are divided into fields, at least three of which are mandatory.

Gen. code	Annotation number	Display string	Sort string	Part identifier or qualifier	Source list	Pointer
Mandatory fields			Conditionally mandatory	Not implemented		

DIAGRAM 4: STRUCTURE OF A UNIT

The generation code, under system control, indicates the number of updated versions of the unit that have been entered subsequent to this version. Current data is identified by generation code 0. Annotation numbers place each unit in a particular annotation class. The display string contains the exact text image to be printed or otherwise displayed when the unit is retrieved.

The sort string, for internal use only, substitutes for the display string when an indexed descriptor is used for matching or sorting. In most cases the sort string can be generated by changing all capital letters to lower case, omitting punctuation and special characters, and squeezing out multiple blanks. These "normal" sort strings are derived from the display string as needed and are not stored. Where a normal sort string would not produce the desired sorting sequence, a special one is generated at input time and stored permanently with the unit.

The part identification is used when a descriptor applies, not to the described entity as a whole, but only to some named part of it. In an identifier

unit, the field which might otherwise be occupied by a part identifier is available for qualification of an identifier that in itself is not unique.

The source list identifies the institutional source of a particular display string. It may be used, for example, when several museums submit the biography of a single artist, listing his name in different forms, each institution wishing to retrieve its own form only. This field includes the official * MCN acronyms of all institutions to which the associated display string "belongs."

The pointer is an embedded link to a separate data item describing the entity named by the present unit.

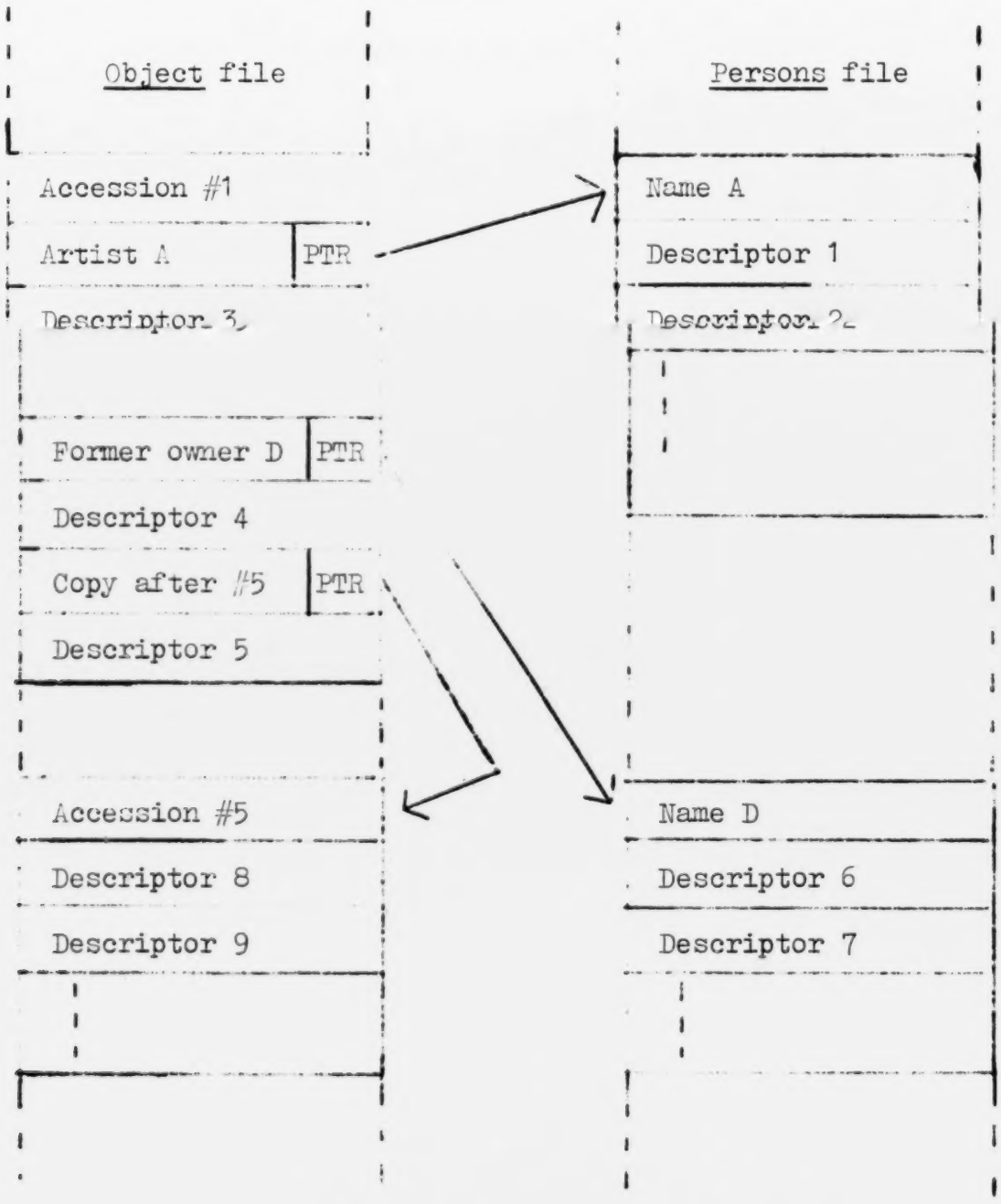

DIAGRAM 5: RELATIONSHIPS AMONG ITEMS

* See Appendix 1.

The relationships illustrated in Diagram 5 would permit optional retrieval of the item "Accession #1" in the following format:

Accession #1

Artist: A

Descriptor 1

Descriptor 2

.

.

.

Descriptor 3

Former owner: D

Descriptor 6

Descriptor 7

.

.

.

Descriptor 4

Copy after: #5

Descriptor 8

Descriptor 9

.

.

.

Descriptor 5

The basis for the formation of a link is the identity of the sort string of the unit with that of the identifier of another item in the appropriate file. Thus the "artist" and "former owner" units can only point to items in the biographic file, and the relationship unit (copy after...) can only point to another member of its own file. Every identifier is a potential "link target," and every descriptor naming an object, person, publication, event or place is a potential "link source."

CONTENT

The minimal item consists of an identifier unit and nothing else. The identifier's function is to establish an identity and attach a name to it. Its *basic significance is that of an existential statement:

"There [is / was] a [thing / person / publication / event / place] called (DISPLAY STRING)."

Additional units may

1) relate the described entity to another item in the data bank:

"and it bears a relationship (DESCRIPTOR) to the subject of item (IDENTIFIER) stored at address (POINTER)."

2) classify the described entity
   a) with all those containing the same annotator:
   b) with all those containing the same annotator-descriptor combination:

"and it is (DESCRIPTOR-ANNOTATOR)." or

3) describe the entity discursively:

"and it (FREE TEXT-ANNOTATOR)."

The factual content of each unit derives from three sources:
1) the subject, named by the identifier unit and represented above by the reflexive pronoun "it."
2) the literal meaning of the descriptor.
3) the relationship between the subject (1) and the descriptor (2), expressed by the annotator, which in turn stands for a fixed definition. (See Appendix 2.)

In existing museum catalogs this same content is recorded on cards or paper, with some kind of heading, corresponding to the identifier, free text and descriptor written out, and relationships expressed in many ways, perhaps only by the placement of text. In the data bank all content implicit and explicit in written records must be retained; and everything not communicated by the mere transcription of characters in sequence, must be conveyed by the annotators.

* In addition, small amounts of factual information may or may not be carried within the display string.

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Two things are essential if the annotators are to work properly.

1) The definitions must be constant.
This requirement is easily met in the context of a limited set of data from one source. It becomes critical when data from various institutions and several disciplines is combined, for some meaning must inevitably disappear whenever data sets using the same annotators in different senses or different annotators in overlapping senses are merged.
Maintenance of a standard set of annotator definitions is the single most important function of a central organization of institutions building compatible data bases.

2) The second essential is that the annotation classes provide one and only one place for every unit of information to be transcribed.
This means that every class must be defined as broadly as the most general descriptor that will go into it but never so broadly as to overlap the meaning of another class. Our approach to this has been empirical. Existing records from many sources have been examined, and the component descriptors sorted into rather obvious classes for indexing. The standard definitions were written "around" these natural groupings. Such definitions are often slightly flexible at first; but as more terms go into a class, there is continually less room for modification of its outlines.

The degree to which information is subdivided, i.e., the number of classes set up for a given body of data, is governed by the following considerations:

1. Separate categories are needed if
   - traditional or anticipated formats require parts of the information to be printed or displayed separately.
   - separate indexing or sort sequences are desired.
2. It is easy to merge separate classes but difficult to separate one into several.
3. It is undesirable, however, to have more classes than necessary.

These factors, applied to records owned by members of the Museum Computer Network, have lead to the current list of annotation classes given in Appendix 2.

One final note should be added about the thesaurus, which is a necessity where vocabulary control is impossible. It remains to be implemented, but its probable form is described in Appendix 3. Needless to say, use of the thesaurus will add to machine overhead. Such overhead can and should be minimized by adhering to uniform vocabulary wherever possible, particularly when new data are gathered for incorporation into a computerized data base.

Supersedes page A1.1 dated 6/70.

APPENDIX 1: ACRONYMS IN USE, JUNE 1970

Acronyms for institutions consist of two, three, or four capital letters of the Latin alphabet with no embedded blanks. The following acronyms have been assigned to date:

AAAL	American Academy of Arts and Letters
NS	The American Numismatic Society
AAS	Arkansas Archeological Survey
BM	The Brooklyn Museum
MCNY	The Museum of the City of New York
FC	The Frick Collection
SRGM	The Solomon R. Guggenheim Museum
HSA	The Hispanic Society of America
JM	The Jewish Museum
MMA	The Metropolitan Museum of Art
MAI	The Museum of the American Indian/The Heye Foundation
MOMA	The Museum of Modern Art
MPA	The Museum of Primitive Art
NGA	The National Gallery of Art
WMAA	The Whitney Museum of American Art

Acronyms for private collections consist of one or two numeric characters followed by two or three Latin capitals, to a maximum of four characters, with no embedded blanks. Only one has been assigned to date:

1 MJH	Collection of Professor Jack Heller

The series beginning with the single numeral "2" will be assigned by the Arkansas Archeological Survey to private owners of material cataloged by the Survey.

NOTE: Since the above was written the acronym method described has been tentatively abandoned in favor of one in which each participating institution and collection is assigned a private annotation class to contain its own accession numbers. Classes 1000 through 2999 have been reserved for this purpose.

Annotation classes thus far assigned for private use are:

66	The Museum of Modern Art accession or Extended Loan number.
86	The Metropolitan Museum of Art accession or Extended Loan number.
1000	The Museum of the American Indian/The Heye Foundation accession number.
1001	*Bodleian Library, Oxford, Shelf-folio reference.
1002	The National Gallery of Art accession or Extended Loan number.

*Tentative assignment for use in event of future participation.

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APPENDIX 2: DEFINITIONS OF ANNOTATION CLASSES IN USE JUNE 1970

Note: Even annotation numbers denote "descriptors," to be searchable via inverted indices. Odd annotation numbers denote "free text," not ordinarily searchable. All annotation numbers must be preceded by at least one blank and followed immediately by a "not" sign (¬) or two "equal" signs (==).

0== File marker.
This annotator marks the end of an item of information. It is not associated with any text.

OBJECT DESCRIPTION: Annotation classes 1 - 199

Section I - Current Ownership

1== Remarks about the possessor of the object. See class 2.

101== Remarks about owner other than possessor.

2-- Name of the possessor.
The name only of the individual, institution, or other legal "person" in physical possession of the object.
Examples: - The _Museum of Modern Art
- Frick Collection

102== Name of owner other than possessor.

3== Remarks about acquisition.
Information relating to the source of the object, the transaction through which it was acquired by the possessor, price paid, discount, etc.
Note: Any such information which is considered confidential should be placed in a restricted annotation class (as 9, 112, 114, or 190), not in class 3.
Examples: - Date given 12/24/59.
- Purchased with funds provided by the donor. Purchase order #1234. Received 9/24/71. Temporary Receipt #5678.9
- Acquired from John Doe in exchange for 7.69 and 842.43 Received... etc.
- Imported via TWA fl. 201, 8-3-71. Customs entry #234,567.

4== Possessor's city.
The name only of the city where the possessor maintains his collection.
Note: Include the state or country if necessary for full identification.
Examples: - New York
- The _Hague
- London, Ontario
- Birmingham, Michigan

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105== Name only of a person, group or organization in whose honor or memory the gift or bequest was made.

5== Credit line.
A standard word or phrase attached by the possessor to the object, for use in labels, catalog entries, reproduction captions, etc., indicating the source of the object and/or giving credit and/or honoring some person(s).
Examples:
- Purchase.
- Given anonymously.
- The John Q. Doe Fund.
- Gift of Mary Doe.

- Gift of John Doe in memory of Mary Abigail Doe.
- The John Doe Bequest.
- Lent anonymously, courtesy of The Museum of Modern Art.

6== Acronym and current accession number.
The acronym assigned by the Museum Computer Network to the possessor, followed by the accession or inventory number assigned by the possessor to the object.
Note: If the possessor is an institution, the acronym consists of 2, 3 or 4 capital letters. If the possessor is a private individual, it consists of the numeral "1" followed by 2 or 3 capital letters. The accession number may consist of any combination of not more than 26 numerals, upper and lower case letters and punctuation marks.

Examples:
- MOMA1.29 (The Museum of Modern Art)
- MOMAE.L.39.1093.1-60 (" " " " ")
- AAAL24 (The American Academy of Arts and Letters)
- BM 45.12.1 (The Brooklyn Museum)
- MCNY52.311.6 (Museum of the City of New York)
- FC 36.3.56 (The Frick Collection)
- HSA A1283 (The Hispanic Society of America)
- 1MJH2 (The Jack Heller collection)

106== Other identification number.
Any identification number other than the primary accession or inventory number attached to the object, as to identify it in relation to some subset of the possessor's entire collection or a collection in which the object was previously cataloged. Precede by an acronym if applicable.

7== Restrictions.
Limitations imposed by deed, agreement, terms of bequest or copyright.
Examples:
- May not be lent.
- Must remain on view.
- Photographer retains reproduction rights.
- Copyright by the artist, 1950.

8== Department.
The name of the department or other administrative division of the possessor's organization having custody of the object.
Examples:
- Drawings and Prints.
- Architecture and Design.
- Dance Archives.
- Egyptian Department.
- Costume Institute.
- Department of _European Art

9== Protected information.
Notes:
- Restricted class. This information will be coded in such a way that it can only be retrieved by the possessor or with his authorization. He may use class 9 in any way he wishes.
- Names of anonymous donors, vendors and collectors recorded under class 9 will not be searchable via inverted index unless repeated in class 112, 114 or 190, respectively. These classes too are protected.

10== Status in collection.
The name of any subdivision of the possessor's collection to which the object is allocated.
Examples:
- For sale or exchange group.
- Extended loan.

- Fraud - for study purposes only.
- Study Collection.

11== Metropolitan Museum of Art loan class.
Note: For use only at the Metropolitan Museum of Art.

12== Benefactor.
The name only of the person or organization that gave, bequeathed or lent the object or the funds for its purchase.
Examples: - United Ststes WPA Art Program.
- Doe, John Q.
- Mary Abigail _Doe.

112== Anonymous benefactor.
Note: This information will be coded, as class 9 above.

13== Remarks about the benefactor.

14== Vendor.
The name only of the person or organization that sold the object to the possessor. Include the city if necessary for identification.
Examples: - Rothko, Mark.
- John _Doe.
- Aspects Gallery.
- Richard _Feigen Gallery, Chicago.

114== Anonymous vendor.
Note: This information will be coded, as classes 9 and 112 above.

15== Remarks about the vendor.

16== Expedition.
The name only of the expedition which excavated or collected the object. Include the year if necessary for identification.

17== Remarks about the expedition.

18== Excavator or collector.
The name only of the person who excavated or collected the object.

19== Remarks about the excavator or collector.

20== Season.
The year in which the object was collected or excavated.

22== Year acquired.
The year in which the object was acquired by the possessor.

24== Purchaser.
The name only of the person or organization to whom deaccessioned object was sold, given or exchanged.

26== Old loan number.
The number under which the object was formerly cataloged as a loan.

27== Remarks about cancellation, return to lender or deaccession.
Note: If confidential this information may be placed in class 9 above.

103== Metropolitan Museum of Art purchase authorization.
Note: For use only at the Metropolitan Museum of Art.

66== The Museum of Modern Art accession number.
Note: For use only at The Museum of Modern Art.

86== The Metropolitan Museum of Art accession number.

Section II - Description

30== Title.
The title used by the possessor in his most recent catalog and/or his current files. The title may be in any language using the Latin alphabet.
Examples: - Balzac: Le chef d'oeuvre inconnue.
- The _Body Lay There, in the Doorway of the Church the People had Built.
- Les _Demoiselles d'Avignon.
- The _Gramineous Bicycle Garnished with Bells and Dappled Fire Damps and Echinoderms Bending the Spine to Look for Caresses.
- Study for "_Nuit de Noël".
- Row House: View from Living Room.
- Seated Nude.
- Untitled.
- (untitled).
- XY=K Green and Red.
- FN/GD.
- (Woman's head.)

31== (number formerly used for title, not currently in use.)

32== Functional type.
The name only of a recognized type to which the object belongs.
Note: Functional type may be used in place of title (class 30) or in addition to it.
Examples: - Atl-atl.
- Coup de poing.
- Krater.
- Li ting.
- Pendant.
- Tea pot.
- Votive figurine.

33== Alternate title.
Any title by which the object is known, other than the one placed in class 30, as foreign language title, alternate translation or transliteration, inaccurate title formerly in use, etc., plus optional explanation of same.

34== Author.
The name only of the author (of an illustrated book) or playwright (in the case of set or costume designs for theater.)

35== General description.
Remarks about the physical structure of the object.

136== Number of parts included in item.
Note: An Arabic numeral.

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135== Remarks about the source document, text illustrated or the original book for a motion picture. See class 44.

136== Number of separately designated parts comprising a composite object described. A decimal number only.

36== Possessor's broadest classification.
The name of any general classification established by the possessor within his own collection.
Note: The content of this class will often coincide with that of class 10, class 32 or class 47. See also class 132, "Secondary classification."
Examples:
- Drawing.
- Basketry.
- Metalwork.
- Arms and Armor.
- Judaica.
- Costumes.
- Anthropology and Ethnography.
- Feature. (in archeological context)

132== Possessor's secondary classification(s)

38== Specific subject(s) (proper noun).
Name only of a real person, fictional character, mythological being, diety, animal, ship, event or place represented.
Examples:
- Man-o-War.
- Charles V.
- Dr. Gachet.
- St. Dunstan.
- Chocmool.
- Santa Claus.
- U. S. S. Maine.
- Toledo, Spain.
- The battle of Bunker Hill.

39== Remarks about the specific subject(s) represented.

40== Subject(s) (generic noun).
Examples:
- Nude.
- Animal.
- Horse.
- Mythological scene.

41== Remarks about the generic subject matter.

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42== Decorative motif.
Name only of a recognized, typical decorative motif used on the object.
Examples:
- Acanthus.
- Egg and Dart.
- Feather pattern.
- Mille fleurs.
- Rhizome border.
- Rosette.

43== General description of the subject matter or scene represented, synopsis of a motion picture.

44== Reference to text illustrated.

46== Technique of manufacture.
Note: Class 48, q. v. , has been defined as "material, instrument or technique." Subsequently reasons were found for setting up a separate class for the name of a technique only, and class 46 was set aside for this purpose. It will be used at least for material cataloged by the Arkansas Archeological Survey. It is understood that searches of combined files on the basis of technique will have to reference the indices for both classes.

47== Medium.
A standard word or phrase attached by the possessor to the object for use in labels, catalog entries, reproduction captions, etc. describing the physical nature of the object.
Examples:
- Pencil.
- Synthetic polymer paint.
- Stencil, printed in metal leaf, silver, metal, gold, copper, aluminum, and shellacked.
- woodcut printed in strong red, deep red, brilliant orange, yellow and in black on verso.
- Assemblage of bones, eggshell, hair, thread and manufactured articles contained in polyester.
- Dye transfer print.

Insert this page between pages A2.5 and A2.6 dated 6/70.

48== Material, instrument, technique.
The name only of any material, method, technique, tool, instrument or the like under which the object should be indexed.

Examples:

Materials	Techniques	INSTRUMENTS
- pencil	- lithograph	- pen
- paper	- woodcut	- brush
- polymer	- wash	- stencil
- synthetic polymer	- stumping	- drill
- crayon	- color photograph	
- color crayon	- dye transfer print	

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49== Paper.
Description of the paper, including description or transcription of the watermark or trademark.
Examples:
- Paper: cream China laid on ivory, smooth wove. ///Watermark "Rives" on mount.
- Watermarks: "J PERRIGOT ARCHES SPECIAL MBM (FRANCE)"; "TRAIT"; "LAVIS."

150== through 160== User defined-dimensions in defined units.
Note: The specific significance of each class is defined by the individual user and is constant only for the specified subset of the data bank. For use only where searching and sorting on size may be desirable.

51== Measurements and weight.
Dimensions and weight of the object.
Note: At the option of the possessor this information may be divided into two units, a short catalog notation under class 51 and full details separately under class 53.
Examples:
- 16 x 20 inches.
- 16 x 20" (40.4 x 50.8 cm.)
- Sheet 16 x 20" (40.4 x 50.8 cm.). ///Comp. 12 1/2 x 17 3/16" (31.8 x 43.7 cm.).
- 318 mm. H. 437 mm. W.
- 42 7/8 in. h. incl. marble base 6 in. h. x 10 3/4 in. diam. ///Wt. 83 lbs. 6 oz.
- Each section 16 inches high by 20 inches wide.
- .a 16 x 20 (40.4 x 50.8 cm.). ///.b 20 x 16" (50.8 x 40.4 cm.).

52== Weight in grams. For use only where searching and sorting by weight may be desirable.

53== Detailed measurements and weight.

54== Language.
The name only of language of an illustrated book, album, portfolio, or motion picture.

55== Primary inscriptions.
Transcription, translation, transliteration, description or mention of major inscriptions, usually those attributed to the artist, designer, or maker of the object, including but not limited to signature, date, dedication, inscribed title, and impression or cast number.

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Examples:
- Signed.
- Signed and dated lower left.
- Signed U. R. in ink "Klee."///Dated below composition on mount in ink "1925...". ///Below composition on mount in ink, artist's hand, "1925 E. Acht. Sklaverei."
- Not signed. ///Dated and inscribed on plexiglas panels "POUR/ 3 ANS/ D'ASSEZ/ BONNE/ CONDUITE/ LE 17 Aout 1943."
- Signed lower right margin "J. Johns 60" in pencil. ///Dated - see above///Impression: "1/35" lower left

margin, pencil, artist's hand.

56== Lugt number or other standard reference to a mark.

57== Secondary inscriptions.
Transcription, translation, transliteration, description or mention of anything other than primary inscriptions (class 55) written on the object, its mount, frame, base, container or the like.

58== Elements of inscription.
Notation of standardized, discreet elements of an inscription, which it may be desirable to retrieve via inverted indexing.
Note: This category was established for the elements of makers' marks recorded from a collection of Sèvres porcelain at the Metropolitan Museum of Art. It may also be suitable for recording individual hieroglyphs.

59== Frame, mount, etc.
Description of frames, mounts, mats, bases, pedestals, containers, etc., not an integral part of the object but permanently associated with it.

60== Searchable negative reference.
Note: The content of class 60 differs from that of class 61 in that:
1) The photo sources are intended to be indexed, not merely retrieved as part of an item.
2) Therefore a unit of class 60 may not contain more than one reference.
3) If a particular sort sequence is desired, input must be standardized.

61== Photo negative sources.
The source and/or location and/or number of known photographic negative and slide materials representing the object or details of it.
Examples: - Leica 223d.
- Juley 68.
- Sunami 8,171.
- MMA copy neg.

161== Reproduction other than photographic (cast, rubbing, etc.)

62== Location.
Permanent location within the possessor's premises, on exhibition or in storage.

63== Condition notes.

64== Style.
Name of a recognized "style" of which the object is typical.
Examples: - Late classic.
- Nabis.
- Art nouveau.

Page A2. 8 dated 1/71 supercedes page A2. 8 dated 6/70

65== Remarks about style.

66== See Page A2. 4.

Section III - Origins and Provenance

68== The name only of a recognized type to which the object belongs.

70== Artist.
The name only of the artist, maker, designer, photographer, motion picture director, workshop or school to which the object is currently attributed by its possessor.
Examples:
- Martin_Rico y Ortega.
- Vincent van_Gogh.
- Workshop of_Rubens.
- David Alfaro_Siqueiros
- Master of the Playing Cards.

170== Name only of an anonymous artist. To remain confidential as Class 9 et al.

Note: No annotation class has been assigned to remarks about the artist, since information of a biographical nature is relegated to separate biographical records, annotation classes 200 - 399.

71== Attribution.
Remarks concerning or justifying attribution to one artist rather than another.

72== Other artist.
The name only of a collaborating artist (not a technician or artisan (class 74)), or assistant director of a motion picture.
or
The name only of another artist to whom the object has been seriously attributed at some other time or by some other authority.

74== Technician or artisan.
The name only of a technician, stone carver, caster, printer, producer of a motion picture, manufacturer or the like who contributed to the making of the object.

174== Associate producer of a film.

75== Remarks about the manufacture, edition or film production.

76== Country of origin.
The name of a modern state associated with the origin of the object, whether by nationality or birthplace of the artist, national school or style, site of discovery or any other connection.
Examples:
- United States.
- The_Netherlands

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- Great Britain.
- Mexico.
- Canada.

176== Site number.

78== Place of origin.
The name of any geographical place, other than a modern state name (class 76), associated in any way with the origin or discovery of the object. Include state and country if necessary for identification.
Examples: - Burgundy.
- State of Mexico.
- Venice.
- Sepik River.
- Peoria Bottom, South Dakota.
- Guadalajara, Mexico.
- Knossos.

178== Intra-site provenience.

79== Remarks about the place of origin.

80== Culture or period.
The name only of any recognized period, epoch, horizon, culture, subculture, tribal group, style or school.
Examples: - Aztec.
- Early Minoan.
- Federal.
- Impressionist.
- Magdalenian.
- Neo-Classic.
- Pre-Columbian.
- Timurid.
- Zuni.

180== Cultural classification.

181== Evidence for cultural classification.

81== Remarks about the culture or period.

182== Developmental stage.

183== Evidence for developmental stage.

Page A2.10 dated 1/71 supercedes page A2.10 dated 6/70.

82== Earliest possible date.
The earliest year to which the object can possibly be attributed.
Notes:
- This represents a limiting date only and need not approximate the actual date of origin of the object.
- This annotation class is not considered a part of the possessor's catalog record. It will be used internally by the computer.
- The date must be represented in a standard format, consisting of an arabic number preceded by a minus sign (for B.C.) or a plus sign (for A.D.).
- Known modern fakes should be given a modern date, not the date of the imitated style.

Examples:
- -10000
-3000
-64
+1
+800
+1914

83== Date for display.
A standard word, number or phrase attached to the object by its possessor for use in labels, catalog entries and reproduction captions, indicating the time of origin of the object.
Examples:
- October 10, 1952.
- 1938.
- 1938-40.
- XIX Century.
- Twentieth Century.
- T'ang.
- c. 1450.
- Paleolithic.
- Late Twelfth Cen.

84== Latest possible date.
Comparable to earliest possible date (class 82).
Note: Use date of acquisition if no earlier limit can be established.

184== Global Reference Code.

85== Remarks about dating.

86== See page A2.4.

Section IV - History

90== Former possessor.
The name only of an individual or institution which formerly owned or held the object.

190== Anonymous former possessor.
Note: This information will be coded, as classes 9, 112 and 114 above.

91== History of ownership.
Remarks about the known or conjectural sequence of ownership, changes of location, dates and circumstances of transfer, etc.

191== Confidential history of ownership.

92== (number formerly used for exhibition history, not now in use)

93== Exhibition history.
Record of public exposure of the object, as in exhibitions or on television.

Note: This entry may take any form. However, if the following special rules are observed, the content of class 93 may serve not only as free text but also as a descriptor, linking the object to others exhibited on the same occasion.

Normal form: Sponsoring institution, comma, city (optional) , comma, state or country (optional), comma, "Exh.", quotation mark, title of the exhibition, quotation mark, comma, dates of exhibition (including year represented by a four-digit number), dash, box (#) and catalog number (optional), period, remarks (optional), period.

Examples:
- National Gallery of Art, Washington, D.C., Exh. "Paintings from the Museum fo Modern Art, New York", Dec. 16, 1963 - Mar. 1, 1964.
- Galerie Chalette, N.Y., Exh. "Leger", Mar. 29 - May 1, 1965.
- Albany Institute of History and Art, Exh. "Art and Science", Sept. 24 - Oct. 31, 1965 - # 23. Cataloged but not exhibited.

Abbreviated form: Any standard abbreviation may be substituted for the above provided the Museum Computer Network is informed of the meaning of the abbreviation. Optional remarks may follow the abbreviation.

Examples:
- Exh. 756.
- Exh. 732, III-3A. Acquisition announced Feb. 15, 1965.
- Exh. 757 - # 122*.

94== (number formerly used for references, not now in use)

95== References.
Documentary sources referring to or illustrating the object.

Note: This entry may take any form. However, if the following special rules are observed, the content of class 95 may serve not only as free text but also as a descriptor, linking the object to others mentioned or illustrated in the same source.

Form. Author(s) name(s), if any, in alphabetical order if more than one, the first at least inverted; comma; title of the article, if any, between quotation marks ("..."); two dashes (--); title of the book or periodical; two dashes; other information in any form and any order.

Examples:
- Barr, Alfred H., --Masters of Modern Art-- (1954) p. 100*
- Crosz, george, --Die Gezeichneten-- Berlin, 1930. Illus. p. 71 as "Die Gesundsbeter," 1918.
- --The Museum of Modern Art Bulletin-- Vol. 3, no. 3, December 1935.
- Rewald, John, --History of Impressionism-- (revised), p. 513*.
- Bean, Jacob, "A Rediscovered Drawing by Raphael," --Metropolitan Museum of Art Bulletin-- N.S., 1964 (Summer), pp. 1-10, p. 8, cover.
- McBride, Henry, "The Chester Dale Collection at New York,"

--Forms-- April 1931, p. 58, pl. betw. pp. 56 & 57.
- Boudaille, G. and P. Daix, --Picasso, The Blue and Rose Periods-- 1967, p. 58, repr. p. 59, cat. no. IX.6.

96== Prize or award.
The title only of any medal, prize or formal honor received by the artist or maker in recognition of the object's merit.

98== (number formerly used for related works, not now in use)

99== Related works.
Reference to another object (attributed to the same or another artist, designer or maker) which is related in any way to the object recorded here. Common relationships include, for example, 1) other cast or impression, 2) copy, 3) replica, 4) model for, 5) earlier or later version, and 6) study for or after. This list is not inclusive.

Note: This entry may take any form. However, if the following special rules are observed, the content of class 99 may serve not only as free text but also as a descriptor, linking this object to related objects.

Form: Relationship of this object to another, followed by as many of the following data as are known, all separated by commas: 1) title of the related object, between quotation marks ("..."), 2) medium and/or date of the related work, 3) "by" followed by the name of the artist or maker of the related work, 4) "Collection" or "Coll." followed by the name of the possessor of the related work, 5) "Ex-Collection" or "Ex-Coll." followed by the name of a former possessor, 6) the same formula for as many former possessors as are known, 7) remarks.

Examples:
- Study after "Ecorché," by Houdon.
- Study for "A Sunday Afternoon on the Island of the Grand Jatte," oil on canvas, 1884-86, Collection The Art Institute of Chicago.
- Another cast Coll. The City Art Museum of St. Louis.
- Study for mural, 1910, Coll. Museum of Modern Western Art, Moscow, Ex-Coll. Shchukin. Commissioned by Sergei I. Shchukin.
- Related to "Joy of Life," oil on canvas, 1905-06, Coll. Barnes Foundation, Merion, Penn., Ex-Coll. Tetzen Lund.

100== Status of record.
The degree of completion, reliability or finality of this item of information.

Examples:
- Tentative.
- Fully cataloged.
- Incomplete.

BIOGRAPHICAL DATA: Annotation classes 200 - 299.

200== Category(ies)
The relationship of the person described to the content of the data bank.

Examples:
- Artist.
- Sitter.
- Printer.

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202== Name.
Examples: (See annotation class 70)

205== Biographical data for display.
Biographical summary as it should appear in catalog listings.
Example: - Born Le Cateau (Picardie) Dec. 31, 1869.///Died Nice Nov. 4, 1954.

208== Nationality.
The name only of a modern state of which the person is or was a citizen or where he was born or did major work or with which he is associated in any other way.
Examples: (See annotation class 76)

210== Sub-national area.
Geographical names, other than those of modern states, associated with the origins, life, or work of the person.
Examples: - Alaska.
- Austria-Hungary.
- Catalonia.
- Florence.
- The Hague.
- Puerto Rico.
- Russia.
- Tuscany.
- Wales.

212== Earliest possible date of birth.
Analogous to "Earliest possible date" (annotation class 82).
Examples: (See annotation class 82)

213== Life dates for display.
Dates of the person's life as they should be given in a catalog listing.

214== Latest possible date of death.
Analogous to "Latest possible date" (class 84).
Note: Absence of class 84 implies that the subject may still be living.
Examples: (See annotation class 84)

242== The name only of an institution or private collector possessing works of art by the subject of this biography and supplying this data.

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LOCATION DATA: Annotation classes 800-999
Note: Prepared in collaboration with Robert G. Chenhall of the Arkansas Archeological Survey.

802== The name only of the institution supplying this data.

804== The name only of the recording station.

806== Site number.
Note: Corresponds to content of class 176 in the records of objects from the site.

906== Reporter's site number.

808== County.
The county in which the site is located.

810== Drainage
The drainage on which the site is located.

812== Map coordinates.
Record in sequence and separated by commas: Township, Range, Section, 1/4 Section, 11/44 Section, 111/444 Section. If the finer sub-divisions are not known, record as much as is available. This information will be used for the creation of the Global Reference Code number.

813== Instructions for reaching site.
Explain as briefly as possible how to get to the site. Cite <u>permanent</u> landmarks wherever possible.

816== Reporter.
The name of the individual reporting the site.

817== Reporter's address.
The mailing address of the individual named in class 816.

818== Recorder.
The name of the individual preparing the site survey form.

819== Recorder's address.
The address of the individual named in class 818.

820== Date of survey.
The day, month, and year when the survey was taken. Record in the form "dd/mm/yr". If only part of the information is known, leave blank spaces.

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830== Site name.
The principal or best known name by which the site is identified.

930== Other name(s) for the site. Any other names by which the site either has been known in the past or is now known.

832== Site category.
A brief (two or three word) description of the general characteristics of the site.
Examples: - Bluff Shelter.
- Late Archaic Mound(s).
- Temple Mound.

835== General description.
A more detailed, textual description of the site. Do not duplicate information that is covered in other classes, such as county (class 808), drainage (class 810), etc., but do include any data pertinent to the orientation, slope, size, floral surroundings, topographic associations or other features appropriate to a verbal description of the site.

839== Previous excavations or collections.
If individuals or institutions are known to have collections from this site, or if there has been work done at the site previously, briefly describe what is known.
Examples: - Reference by Moore 1908: 328.
- Excavated by UOA Field School 1964.
- Collection owned by John Doe.

840== Cultural classification.
Two or more words as necessary to describe the phase and/or the culture represented at this site.

841== Authority for cultural classification.
Normally, authority for a cultural classification will include both a brief listing of the diagnostic traits (e.g., pottery types or point types) and the published reference which associates this combination of traits with the particular cultural terms used in class 840.

842== Developmental stage.
Technological stages represented at the site. May or may not be firmly placed geographically and temporally (See class 840).
Examples: - Late Archaic.
- Middle Mississippian.

843== Authority for developmental stage classification. See 841.

844== Earliest probable date.
Note: Express all dates in terms of the Christian calendar by preceding the dates with a "+" or "-" to signify "A. D." and "B. C." respectively.

846== Latest probable date.

847== Authority for dates.
Normally a published reference where reliable dating techniques have been used to establish a similar range of dates for materials placed in the same cultural classification or developmental stage. If materials from the site have been dated directly, these dates should be used, and the basis of dating recorded. Any comments regarding the apparent reliability of the dates should also be included.

849== Remarks about dating.

860== Photographic negative numbers.
See comments on class 60.

861== Photo Reference.
Note: Corresponds to class 61 in object record.

863== Condition.
A brief statement describing the present condition of the site.

884== Global Reference Code.
A single number up to eight digits long as necessary to express the exact location of the site in accordance with the Global Reference Code system originated by the Smithsonian Institution.

902== Owner of site.
The name of the individual(s) or firm which owns the land on which the site is located.

903== Address of owner.
The mailing address of the individual(s) or firm shown in class 902.

904== Occupant, tenant or manager.
The name of the individual who presently controls the occupancy of the site and is in a position to grant or reject access to the site.

905== Address of occupant, tenant or manager.
The mailing address of the individual named in class 904.

CATEGORIES FOR USE OF INDIVIDUAL USERS: Classes 1000-2999

1000== Museum of the American Indian/Heye Foundation accession number.
Note: For use at the Museum of the American Indian/ Heye Foundation only.

1001== Bodleian Library, Oxford, Shelf-folio reference.

1002== National Gallery of Art, Washington, D.C. accession or Extended Loan number.

APPENDIX 3: MODEL FOR A COMBINED THESAURUS AND INVERTED INDEX.

(Illustrating the relationships among the following English and French descriptors in class 48 (materials)):

Stone
  marble
  marbre
    Parian

The hierarchy may descend to any number of levels.

1. Excerpt from the Item file:

Address	Annotator	Descriptor
1001	6	identifier 1
1002	n_1	descriptor 1
1003	m_1	free text 1
1004	48	parian
1005	n_2	descriptor 2
.		
.		
.		
1021	6	identifier 2
1022	n_1	descriptor 3
1023	n_2	descriptor 4
1024	48	marble
1025	m_2	free text 2
.		
.		
.		
1041	6	identifier 3
1042	n_1	descriptor 1
1043	m_1	free text 3
1044	n_3	descriptor 5
1045	48	marble
.		
.		
.		
1060	6	identifier 4
1061	m_2	free text 4
1062	48	marbre
.		
.		
.		

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1080	6	identifier 5
1081	48	stone
.		
.		
.		
1100	6	identifier 6
1101	n_1	descriptor 3
1102	48	stone
.		
.		
.		

(n = any even number; m = any odd number)

2. Excerpt from inverted index for class 48.

Address	Descriptor	Pointers (in blocks of 5)
3001	alabaster	----, ----, ----, ----, 0000
.		
.		
.		
3559	marble	----, 1021, 1041, 3867, 4223
3560	marbre	1060, 3559, ----, ----, 0000
.		
.		
.		
3867	parian	----, 1001, ----, 0000, ----
.		
.		
.		
3943	stone	----, 3559, 1080, 1100, 4874
.		
.		
.		
3992	zinc	----, ----, 0000, ----, ----
.		
.		
.		
4223	(overflow)	----, 3560, ----, ----, 0000
.		
.		
.		
4874	(overflow)	----, 3001, 0000, ----, ----
.		
.		
.		

3. Excerpt from a list of addresses evoked by a request for stone objects.

----, 1021, 1041, 1001, 1060, 1080, 1100, ----

As the index is scanned, addresses within the range of the Item File are appended to the list, while addresses within the range of the index are used as pointers to additional blocks in the index.

Data and overflow addresses are added to the index automatically as new items enter the file, but cross reference addresses must be inserted by specific command following a staff decision that the meaning of one descriptor is identical with or falls within the scope of another.